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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,270	11/10/2003	Robert J. Gartside	1094-11 DIV	4907

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EXAMINER

NGUYEN, CAM N

ART UNIT PAPER NUMBER

1754

DATE MAILED: 06/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/705,270

Applicant(s)

GARTSIDE ET AL.

Examiner

Cam N Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on November 10, 2003 (a divisional of 09/880, 670)
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 01/26/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112 (Second Paragraph)***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear as to what "metathesis reaction product" is intended to produce by the claimed metathesis process. Thus, renders the claims vague and indefinite.

### ***Claim Rejections - 35 USC § 102(e)***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 7-11 & 13-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Gartside (US Pat. 6,727,396 B2).

The applied reference has a common inventor (Gartside) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it

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constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Gartside discloses a process for converting butene-1 to ethylene and hexene-1, comprising: (a) subjecting a feed comprised of at least 90% butene-1 to catalytic metathesis under conditions and with a metathesis catalyst that produces an effluent comprising ethylene and hexene-3 to provide a weight selectivity to hexene-3 of at least 40% from butene-1; and step(b) thru step(e), etc. (see col. 9, claim 16). The weight selectivity to hexene-3 from butene-1 is at least 50% (see col. 10, claim 17). The catalyst is selected from the group consisting of tungsten oxide, molybdenum oxide, rhenium oxide, and mixtures thereof (see col. 10, claim 18). The catalyst is tungsten oxide supported on a silica support (see col. 10, claim 26). Broadly, the metathesis conditions including at a WHSV of from about 3 to about 200, a pressure of from about 2 bar to about 40 bar, a temperature of from about 40°C to about 400°C (see col. 10, claims 21-25 & claims 27-31).

Regarding claims 7 & 14, the claimed limitation on "the reaction possesses a weight selectivity to hexene-3 of at least 55 weight percent" is met by the teaching of the reference (see Gartside at col. 10, claim 17) because Gartside discloses the weight selectivity of "at least 50% by weight", which encompasses the claimed "at least 55 weight percent".

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Regarding claims 8-9, the claimed feedstocks are disclosed (see above).

Regarding claim 10, the reference is silent with respect to specific amount of the impurities contained in the silica support. However, it is considered the claimed silica support is the same as the disclosed silica support material in view of the teaching, that "such support has a minimized amount of both acidic and basic sites and preferably essentially no acid and essentially no basic sites, with silica is being preferable" disclosed by Gartside (see Gartside at col. 2, ln 16-19).

Regarding claim 11, a chromatographic grade silica is exemplified (see Gartside at col. 7, Example 4, ln 38).

Regarding claim 13, the claimed transition metal oxides are disclosed (see Gartside at col. 10, claim 18).

Regarding claims 15-16, the claimed metathesis conditions are disclosed (see (see col. 10, claims 21-25 & claims 27-31).

Regarding claims 17-18, the claims are met by the reference (see Gartside at col. 4, ln 4-5).

Regarding claim 19, it is inherent that the disclosed metathesis process requires the same contacting time as the claimed contacting time since the disclosed process is the same as the claimed process.

Gartside discloses the same metathesis process, thus anticipates the claims.

**Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gartside (US Pat. 6,727,396 B2), as applied to claims 7-11 & 13-19 above, and further in view of Knuuttila et al., "hereinafter Knuuttila", (US Pat. 5,177,291).

Gartside discloses a metathesis process as described above, except for the transition metal oxide amounts.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized the transition metal oxide, such as tungsten oxide, in the amount as suggested by Knuuttila, which is 0.1-40% by weight of the catalyst (see Knuuttila at col. 7, ln 7-8) to achieve a catalyst having improved in conversion capabilities, such as to provide a metathesis process for the conversion of olefins wherein the reaction proceeds in an extremely pure manner without acid catalytic site reactions as taught by Knuuttila (see Knuuttila at col. 1, ln 45-49).

**Citations**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gartside et al. (US Pat. 6,420,619 B1), Schwab et al. (US Pat. 6,646,172 B1), Sweeney (US Pat. 5,057,638) are cited for related art.

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**Conclusion**

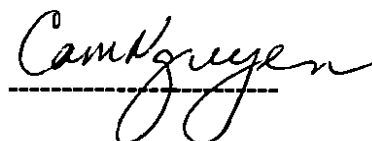
8. Claims 7-19 are originally pending in the application. Claims 7-19 are rejected.

No claims are allowed.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (571) 272-1357. The examiner can normally be reached on M-F from 9:30 am. to 6:00 pm.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to telephone number (571) 272-1700.

A handwritten signature in cursive script, reading "Cam Nguyen", written over a horizontal dashed line.

Cam Nguyen

Primary Examiner

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Nguyen/cnn *cnn*

June 5, 2004